



# Seismic Monitoring of the Pantanal Sedimentary Basin and Adjacencies

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## Abstract

The Pantanal is a tectonically active sedimentary basin of quaternary age, located in the Upper Paraguay Basin (BAP), located in the Center-West region of Brazil. The basin is considered to be one of the seismic regions of Brazil, where there are significant records of earthquakes due to faults of reverse type, transcurrent (transverse) component with focal depth in the order of 5 km. There have already been four significant earthquakes such as the ones in Corumbá (June 1, 1919, with magnitude 5.0), in Miranda (February 13, 1964, with magnitude 5.4), in the Region of Coxim, 100 km to W inside the Pantanal (June 15, 2009, with magnitude 4.8) and Aquidauana (November 6, 2015 with magnitude 4.0). This monitoring aimed at collecting data for the mapping of seismic hazard of the Pantanal Sedimentary Basin (BSP) and its adjacencies, through the study made possible the understanding of the dynamics of the seismic activities and the understanding of the structure of the lithosphere. Currently, the State of Mato Grosso do Sul has 10 seismographic stations: Amambai (AMBA), Antônio João (ANTJ), Aquidauana (AQDB), Bodoquena (BDQN), Chapadão do Sul (C2SB), Porto Murtinho, Pantanal/Corumbá), Sonora (PP1B), Ribas do Rio Pardo (RPRD) and Rio Verde (RVDE). The records of local, regional and distant events were identified through analysis of seismic records. For local and regional events readings of the arrival times of the "P" and "S" waves and their amplitudes were made. In addition to epicentral determinations and magnitudes, using the programs SAC, SeisGram and SeisComp3.

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Abstract ID: 1740fb, Contribution type: Oral Presentation, Session: Local, Regional and Global Seismicity & Seismic Sources Studies, Submitted by: Edna Maria Facincani (edna.facincani@hotmail.com).